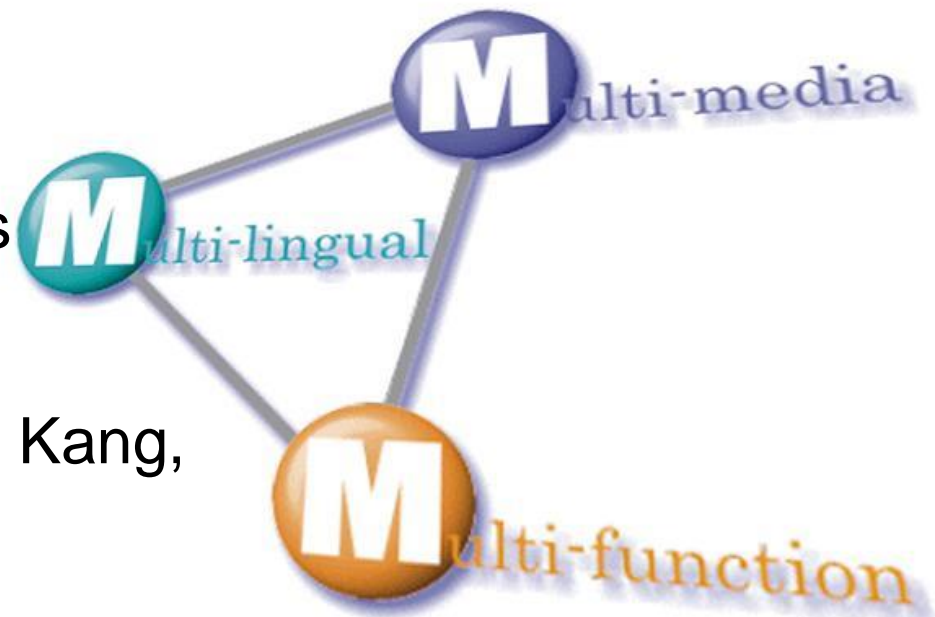


TUA1 at the NTCIR-14 STC-3 Task

Chinese Emotional Conversation Generation Subtask

Tokushima University
Department of Information
Science & Intelligent Systems

Yangyang Zhou, Zheng Liu, Xin Kang,
Yunong Wu, and Fuji Ren



- Background
- Purpose
- Related work
- Proposed method
- Data processing
- Experiment
- Evaluation
- Conclusion and future work
- References



山下智久_Yama-P 🏆

08-15 来自 Weibo.intl

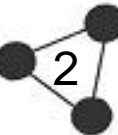
拍了中国杂志~!!
好开心!! 👍 ✨
今天也学了中文。

it was difficult but I enjoyed it 🤞
[@STARBOX人物](#)

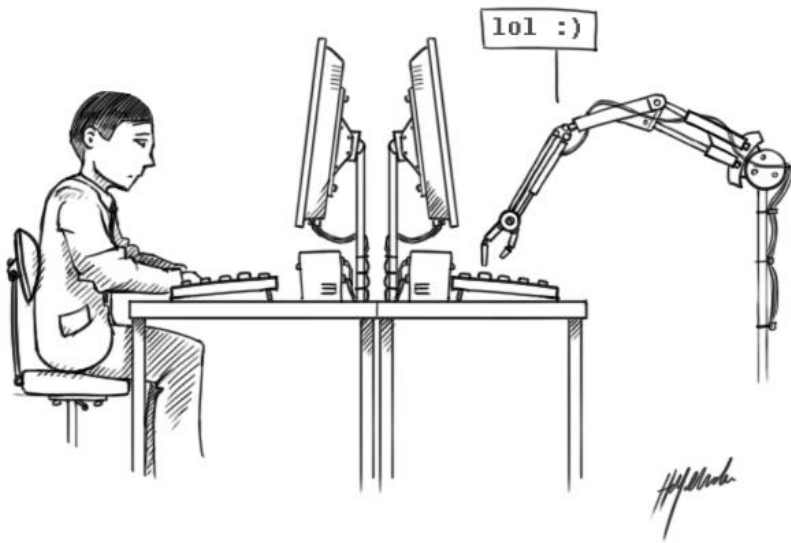


📄 1.1万

💬 2904



More
appropriate
response



Turing test

What love do
you talk about?
Kneeling.

16:27 ... 11.6K/s * 58%

← 微博正文 ...

转发 84 评论 192 赞 4694

手机用户2968 🏆 89

10-20 01:17

报姐我能爱你么 ❤️ Can I love you?

Huntermarch: 僵尸粉谈什么爱情 憋着
朝比玖奈: 这位僵尸厉害了
共6条回复 >

Linssy_chun 13

10-20 01:23

👉 什么样的博主就有什么样的粉丝，活该你一辈子好看

南城啊啊啊啊: 又把自己夸了
你看你背后我在微笑着点头: 就喜欢你这种耿直宝宝。🐱 You're bragging about yourself again.
共3条回复 >

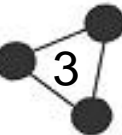
手机用户853667 🏆 66

10-20 01:17

马建国今天一米四 You are 1.4 meters today.

转发 | 评论 | 赞

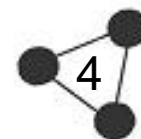
微博Android客户端



Purpose

Post (Given)	Emotion Category (Given)	Response (to be generated)
爱狗还会做饭的男人，最帅了！ The man who cooks and loves dogs is very handsome!	喜欢 Like	会做饭的男人是很帅的啊。 The man who cooks is handsome.
本来想学一把沧桑，结果令我 更忧伤。 I wanted to learn the vicissitudes of life, but I became sadder.	悲伤 Sadness	这是一个悲伤的故事。 It a sad story.

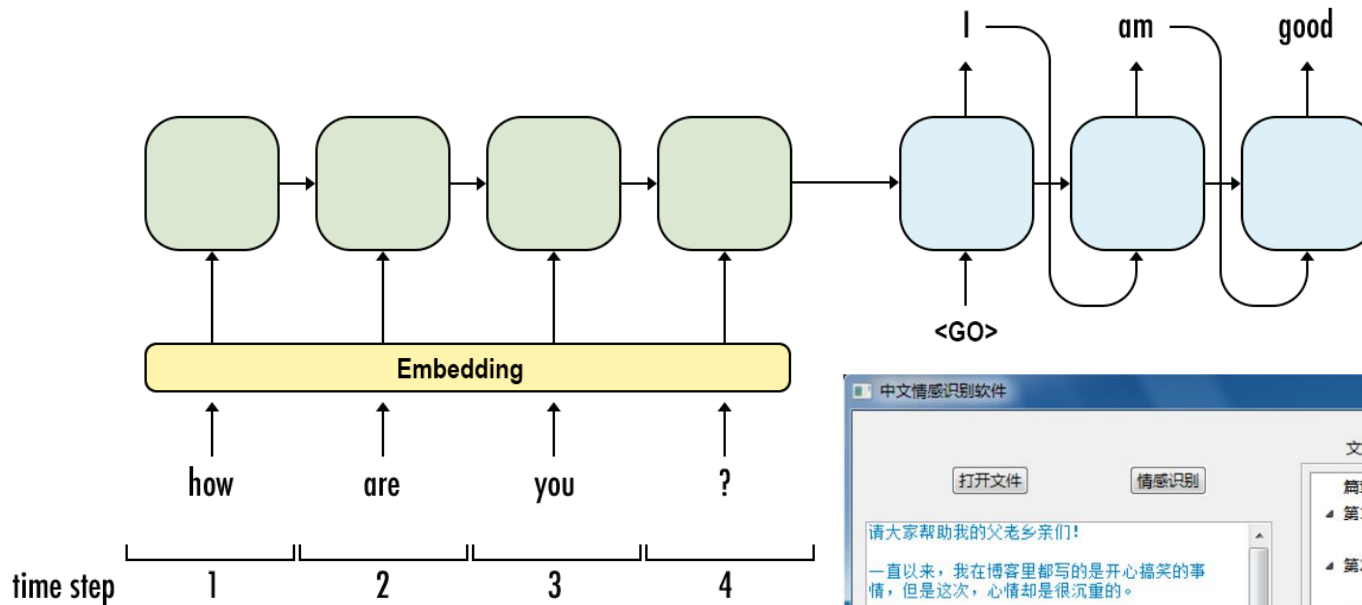
6 categories : {Anger, Disgust, Happiness, Like, Sadness, Other}



Related work

ENCODER

DECODER

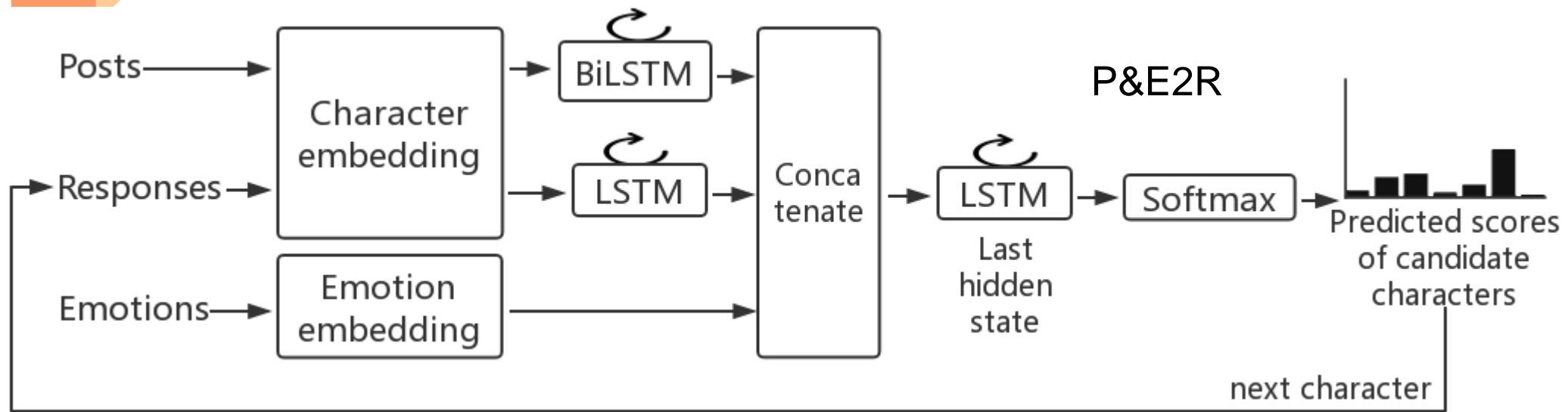


Sequence to sequence problem

Chinese emotion analysis and recognition application

The screenshot shows a software window titled "中文情感识别软件" (Chinese Emotion Recognition Software). The interface includes a "打开文件" (Open File) button and a "情感识别" (Emotion Recognition) button. The main text area displays a paragraph of Chinese text about an earthquake. To the right, there is a "文章结构" (Article Structure) panel showing a tree view of paragraphs and sentences. Below this, a "句子情感" (Sentence Emotion) panel displays a grid of emotion icons (emojis) corresponding to the text. The emotions shown include "期待" (Expectation), "高兴" (Happy), "喜爱" (Love), "惊讶" (Surprise), "焦虑" (Anxiety), "悲伤" (Sadness), "愤怒" (Anger), and "憎恨" (Hatred). The "期待" and "悲伤" icons are highlighted in the bottom left corner.

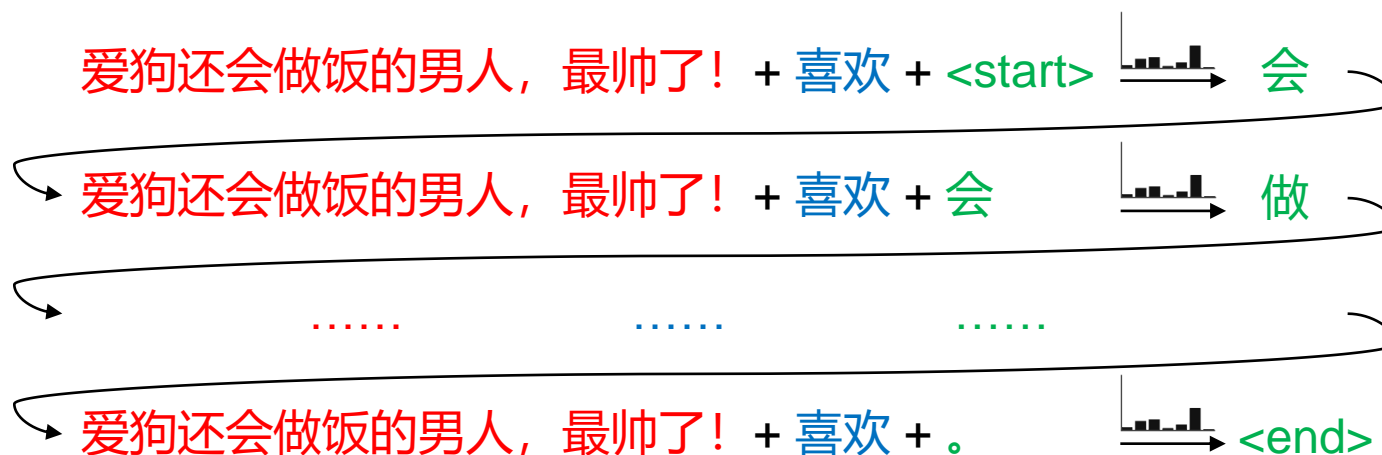
Proposed method



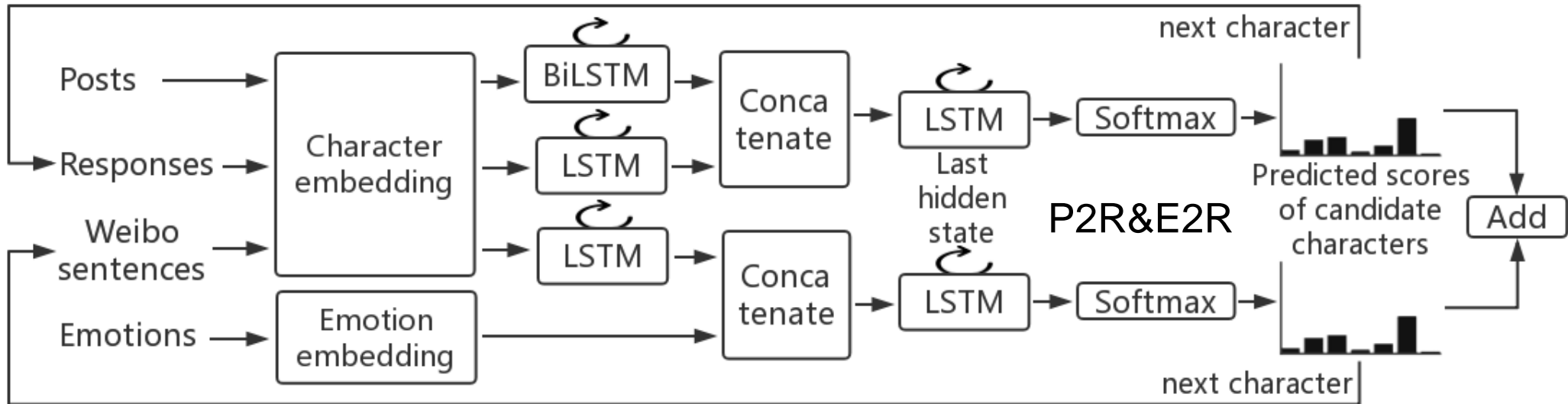
爱狗还会做饭的男人，最帅了！
The man who cooks and loves
dogs is very handsome!

喜欢
Like

会做饭的男人是很帅的啊。
The man who cooks is
handsome.



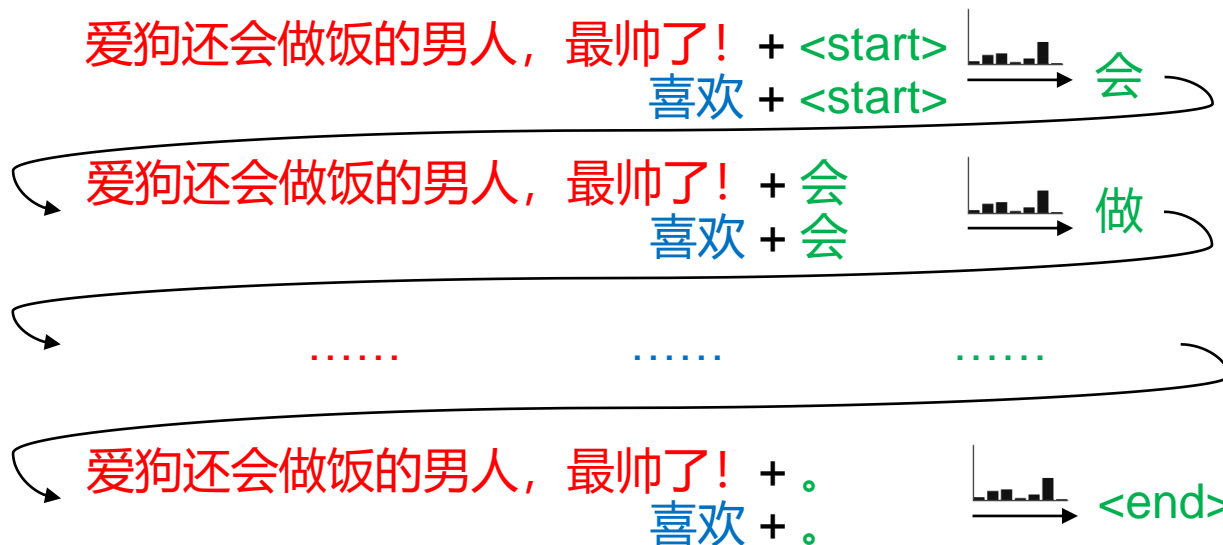
Proposed method



爱狗还会做饭的男人, 最帅了!
The man who cooks and loves
dogs is very handsome!

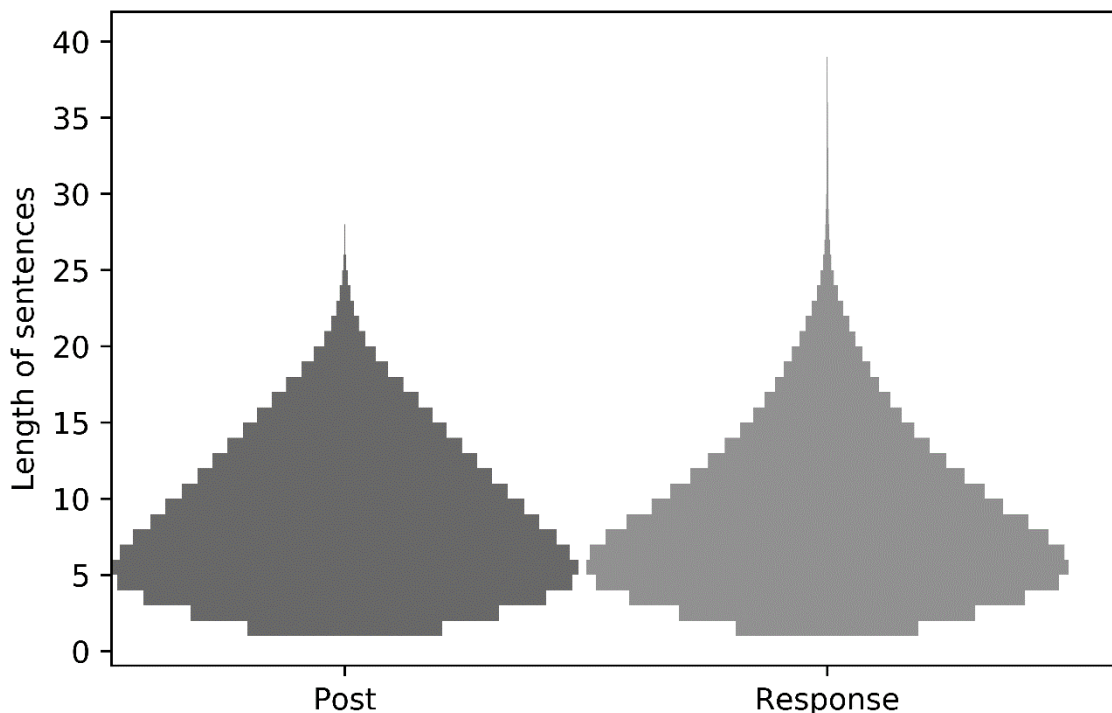
喜欢
Like

会做饭的男人是很帅的啊。
The man who cooks is
handsome.



Data processing

Over 1.7 million Weibo post-response pairs



Distribution of posts & responses length

0.32% of responses are longer than **30+2** characters

Extra dataset

40 thousand sentences and
corresponding emotion labels

1

- Removing pairs without Chinese characters.
- e.g. –How are you?
–Fine.

2

- Removing extra duplicate characters (3 times at most).
- e.g. –哈哈哈哈哈
哈!!!!

3

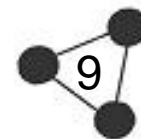
- Removing low-frequency (frequency < 50) characters.
- e.g. –这是饕餮。

Evaluation

200 posts x 5 emotions

Given post: 爱狗还会做饭的男人，最帅了!
The man who cooks and loves dogs is very handsome!

Response	Chinese/Translated English	Emotion Class	Coherence and Fluency	Emotion Consistency	Label
Response 1	会做饭的男人是很帅的啊。 The man who cooks is handsome.	喜欢 Like	Yes	Yes	2
Response 2	哈哈，我也觉得。 Haha, I feel the same way.	喜欢 Like	Yes	No	1
Response 3	这是哪部电影里的？ Which movie is this from?	厌恶 Disgust	No	Yes	0
Response 4	哈哈，你也是。 Haha, the same to you.	喜欢 Like	No	No	0

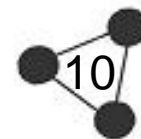


Experiment

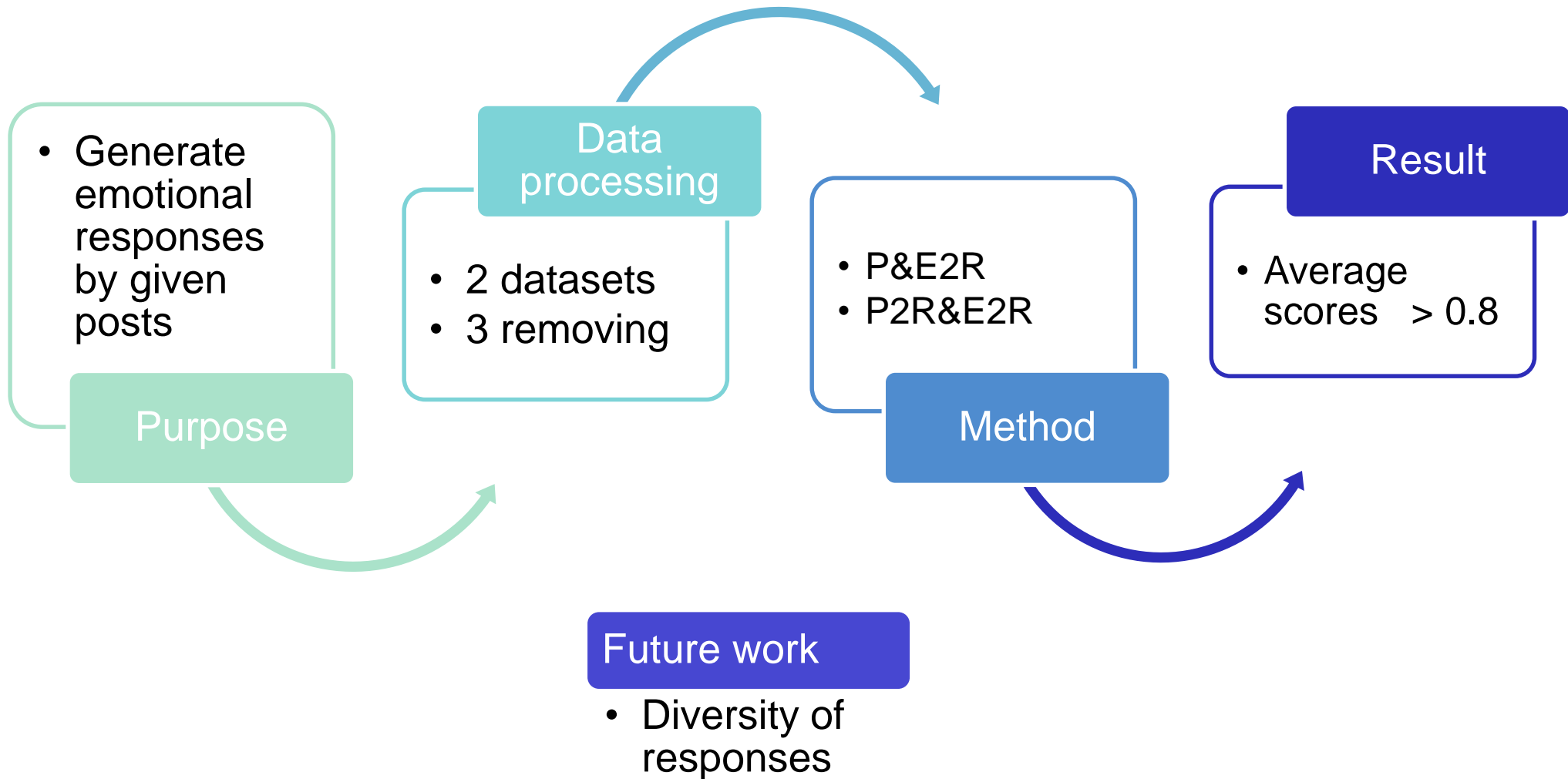
Evaluation results of our run submissions

	Like		Sad		Disgust		Anger		Happy		Total	
	1	2	1	2	1	2	1	2	1	2	1	2
Label 0	121	109	84	92	82	92	85	85	71	76	443	454
Label 1	11	24	31	40	105	82	110	107	36	25	293	278
Label 2	68	67	85	68	13	26	5	8	93	99	264	268
Average	0.735	0.790	1.005	0.880	0.655	0.670	0.600	0.615	1.110	1.115	0.821	0.814

Post	Why do not movie theaters sell peripheral products [tears] 为什么 电影院 不卖周边呢 [眼泪]	
Responses	TUA1_1	TUA1_2
Like	I also like. 我也喜欢。	Because I like to watch movie 因为我喜欢看 电影
Sad	[tears] I also want it [泪] 我也要	Because I also have not seen it [tears] 因为我没看过 [泪流满面]
Disgust	What's going on? 这是什么情况啊?	Because you didn't watch the movie 因为你没有看 电影 啊
Anger	What do you mean? 什么意思?	What movie ? 什么 电影 啊?
Happy	[laughing] [偷笑]	Ha ha, many people know, do not know what fun? 哈哈, 好多人都知道, 不知道有什么好玩的?



Conclusion and future work



1. Sutskever, I., Vinyals, O., Le, Q.V.: Sequence to sequence learning with neural networks. In: Advances in neural information processing systems. pp. 3104–3112 (2014)
2. Vijayakumar, A.K., Cogswell, M., Selvaraju, R.R., Sun, Q., Lee, S., Crandall, D., Batra, D.: Diverse beam search: Decoding diverse solutions from neural sequence models. arXiv preprint arXiv:1610.02424 (2016)
3. Ghosh, S., Chollet, M., Laksana, E., Morency, L.P., Scherer, S.: Affect-Im: A neural language model for customizable affective text generation. arXiv preprint arXiv:1704.06851 (2017)
4. Zhou, H., Huang, M., Zhang, T., Zhu, X., Liu, B.: Emotional chatting machine: Emotional conversation generation with internal and external memory. In: ThirtySecond AAAI Conference on Artificial Intelligence (2018)
5. Gao, F., Sun, X., Wang, K., Ren, F.: Chinese micro-blog sentiment analysis based on semantic features and pad model. In: 2016 IEEE/ACIS 15th International Conference on Computer and Information Science (ICIS). pp. 1–5. IEEE (2016)
6. Quan, C., Ren, F.: Visualizing emotions from chinese blogs by textual emotion analysis and recognition techniques. International Journal of Information Technology & Decision Making 15(01), 215–234 (2016)

